REMARKS

FIG. 4 was apparently objected to because, according to the Examiner, the stacker and the unstacker should be depicted separately. Applicants traverse and, therefore, respectfully decline to amend FIG. 4. First, the stacker and the unstacker of FIG. 4 are constructed as one *unified circuit* that includes elements c1, c2, a number of components labeled 415, and a number of components labeled 420. Applicants see no reason to artificially break up this element/circuit for purposes of exposition, and in fact, see a real danger of confusion that might arise if the element/circuit were to be "broken" up. Second, the Examiner's assertion of an alleged deficiency is incorrect because FIG. 4 includes a curly bracket that encompasses elements 415, 420, and C1, <u>but excludes element C2</u>, and this curly bracket has the associated label "stacker;" as well as a curly bracket that encompasses elements 415, 420, and C2, <u>but excludes element C1</u>, and this curly bracket has the associated label "unstacker." Consequently, it is respectfully submitted that no confusion exists, no ambiguity exists that might render the application unclear, and no need exists to modify FIG. 4. Third, the detailed descriptions pertaining to FIG. 5 make the operation of FIGS. 4 and 5 eminently clear.

FIG. 5 is amended to remove reference to port numbers, and this is believed appropriate because no reference is made to port numbers in the specification.

The specification is apparently objected to because, according to the Examiner, "more detailed descriptions of Figs. 14a and 14b are needed in order for a person skilled in the art to understand how the 'routing properties of an Arrayed Waveguide Grating' were utilized to stack a serial stream of packets and unstack a composite packet." Applicants respectfully traverse.

FIGS. 14A and B are not presented and discussed in a vacuum. A number of stacker and unstacker implementations are presented at earlier points of the specification, and therefore it is respectfully submitted that a skilled artisan who reads the specification and reaches FIGS. 14A and B already knows that the essence of a stacker is a means for delaying earlier-arriving packets by just the right amount, and combining all of the delayed packets (if the packets arrive serially via a given line/fiber/port). Since each of the delayed packets is at a different wavelength, the result is a stacked, multi-wavelength,

packet; i.e., a composite packet. The converse applies to the unstacker. That is, a composite packet arrives, and one needs to segregate the different wavelengths, delay each one by a different interval (each being a different multiples of the composite packet's duration), and recombine the delayed packets if it is desired to create a serial stream.

In applicants' view, it is quite clear that the FIG. 14A accomplishes the stacking function. As depicted, FIG. 14A comprises a double Arrayed Waveguide Grating (AWG) 1505, with two terminals on the left hand side, and two groups of terminals on the right hand side. A reader who even is a less than skilled artisan would understand that the upper terminal on the left is associated with the upper group of terminals on the right, and that the lower terminal on the left is associated with the upper group of terminal on the right. As an aside, since an AWG device is bi-directional, understanding of the operation is not compromised if a reader would assume that the upper terminal on the left is associated with the lower group of terminals on the right, and vice versa.

In operation, a stream of packets arrives on the lower terminal from the left side of device 1505 (as shown by the line with the arrow pointing to the right), and exits device 1505 at different outputs of the lower group (right side) of terminals. The different terminals from the lower group are delayed by different delays; illustrated with only three terminals (for sake of drawing clarity) with one delay being 0 times T_p (i.e., no delay), the next being a delay of 1 times T_p and the last-depicted terminal being delayed 7 times T_p. The delayed outputs are fed to the upper terminals (right side) of device 1505, and because the delays are selected appropriately, the packets are fed to the upper terminals of device 1505 concurrently. Obviously, the delayed packets are fed to the terminals that are adapted to pass the wavelength of the applied packets and, therefore, the packets of different wavelength that are applied concurrently to the upper group of terminals on the right side of device 1505 exit concurrently on the upper terminal left side terminal of device 1505, thereby delivering a composite packet.

A completely complementary explanation applies to FIG. 14B.

The above explanation is based on the understanding by the undersigned, without prior consultation with any of the inventors. If the undersigned legal representative – who did not prepare the specification and whose skill is certainly lower than that of a

person skilled in the art – is able to understand FIGS. 14A and B, it follows that a person who is skilled in the art would most certainly have no trouble understanding FIGS. 14A and B without any additional expository text.

Claims 10 and 15 were rejected under 35 USC 112. (The Examiner referred to claim 5, but the order in which the claims are identified by the Examiner, and the comments that followed, make it clear that the Examiner meant claim 15.) The Examiner asserted that claim 10 is not clear as to how the fiber Bragg grating is incorporated with the optical switch of claim 7, and that claim 15 is not clear how the Bragg fiber grating is incorporated in the method of claim 14.

Applicants respectfully traverse. Although claim 14 is amended herein (for other reasons), lest the Examiner believe that the rationale of the rejection stands, applicants respectfully submit that both the original claim 14 as well as the amended claim 14 comply with 35 USC 112. A method claim that specifies use of a particular device or technique might, perhaps, be considered broad, but it is not unclear. Use of the device or technique in <u>any</u> of the claimed steps causes an infringement. Amended claim 15 is significantly different from the original claim 15, and it is believed that amended claim 15 comports with the requirements of 35 USC 112.

Claims 1, and 3-10 were rejected under 35 USC 102 as being anticipated by Adams et al, US Patent 6,748,175. Applicants respectfully traverse.

The Adams et al reference describes a dual-ring bi-directional optical fiber transmission system that carries multiple WDM channels. There is no description, and no suggestion, of "composite packets." The Examiner cites col. 4, lines 23-25 for the proposition that the reference teaches composite packets. Actually, the cited passage begins in the middle of a sentence and ends in the middle of the sentence, and if one were to assume that the Examiner miscounted the line numbers by one line (which can easily occur and is quite understandable) the Examiner's citation would be stating:

> In hub 130, incoming information packets are applied to ring 101 via multiplexer 230, and outgoing information packets are extracted from ring 101 via demultiplexer 235.

It is respectfully submitted that the above-cited passage does not teach or suggest *composite* packets. The Examiner's attention is respectfully directed to the specification, and particularly to paragraph 2 thereof.

Claims 3-10 depend on claim 1 and, therefore, at least by virtue of this dependence claims 3-10 are not anticipated by the Adams et al reference.

Claims 2, 11, 14, 15, and 16 were rejected under 35 USC 103 as being unpatentable over Adams et al in view of Hui Zang et al, "Photonic slot routing in all-optical WDM Mesh Networks, *Global Telecommunications Conference – Globecom '99*. (The Examiner used the phrase "anticipated" but, most likely, that is an error.) This rejection is respectfully traversed.

The Hui Zang et al reference discusses the notion of time slots, and of a plurality of packets within each time slot. However, the reference does not have composite packets, and that is clearly evident in FIG. 1, which shows that the individual packets that occupy a particular time slot and wavelength are either dropped or passed based on the information in their destination field. The Examiner cited the Hui Zang et al reference for the proposition that they "teach to add packets from a node to a newly created photonic slot in no other slots are contending for the link." Aside from the fact that this statement by Hui Zang et al is unclear[1], any reasonable interpretation thereof supports applicants' assertion that the Hui Zang et al reference does not deal with composite packets. Therefore, it is respectfully submitted that claims 2, 11, 14, 15, and 16 are not obvious in view of the Adams et al and Hui Zang et al combination of references.

New claims 17-18 depend on amended claim 16 and are believed allowable because base claim 16 is believed allowable, and because fiber Bragg grating elements are not employed in the methods of either Adams et al or Hui Zang et al.

New claim 19 specifies composite packets, which as argued above, are not described or suggested by the Adams et al and the Hui Zang et al references. Additionally, claim 19 specifies use of stacking (to create the composite packets) and/or unstacking (to decompose composite packets) and neither the concepts of stacking or unstacking is described or suggested by the references.

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[1] A time slot is a unit of time, and presumably it is not a time slot that is created by data is created that is placing in an existing, empty, time slot.

In light of the above amendments and remarks, applicants respectfully submit that all of the Examiner's rejections and objections have been overcome. Reconsideration and allowance are respectfully solicited.

Respectfully,
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By [signature]

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